H240 hydro H240
USER'S MANUAL

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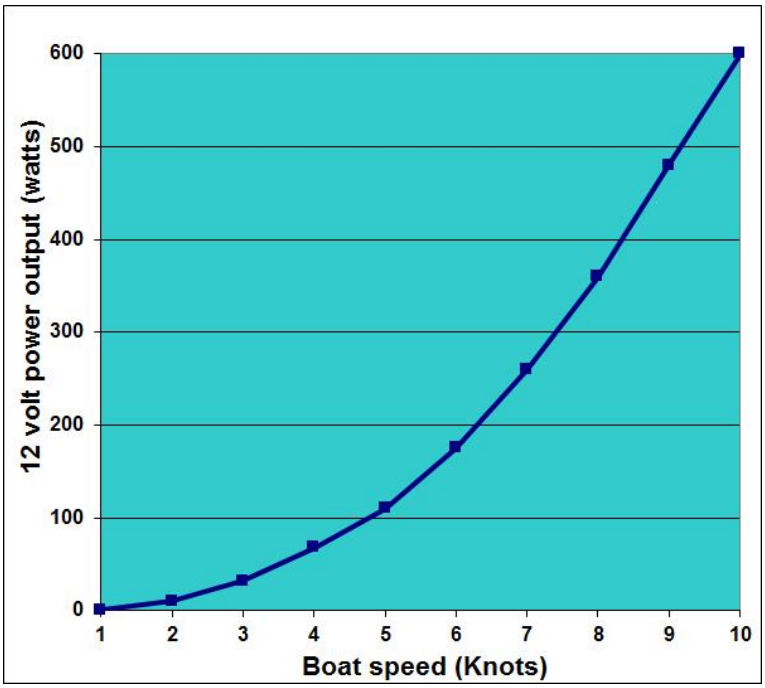
This manual is intended to explain the different possible manipulation of hydro-H240. It comes after the installation on the boat.
If you are looking for information about installing the device, please refer to the installation manual.

1. Scope of application of hydro Save Marine H240

1.1 Energy production

The hydro Save Marine H240 is a device for converting the mechanical energy of a fluid into electrical energy. Specifically, it can charge the batteries of your sailboat. It is designed to produce energy from 1m / s (less than 2 knots). The production increases with the boat speed according to the following curve to reach a maximum of 500W at 9 knots:



These performance values are given as an indication. Actual values depend on the installation conditions, use, navigation and charging status of batteries.
Beyond 10 knots, the controller stabilizes the power generation to 600W maximum.
Operating limit: The hydro is optimized for speeds between 4 and 8 knots. ***From 10 knots it is requested to raise it.***
In case of Overspeed or shock the automatic Clamcleat activates and release the hydro which floats horizontally (see description below).

1.2 Battery Compatibility

This product is designed to recharge service batteries of a cruising sailboat and not to be connected directly to another device.
Currently three types of batteries can be combined with this material:
- Lead acid batteries with liquid electrolyte.
- The AGM batteries (gel electrolyte).
- The Lithium-Ion batteries only if they are equipped with their own charge controller.

2. Safety instructions for the user

The hydro is not harmless because of the pale rotational movement and power generation. Please read carefully the following safety instructions.

2.1 Dangers mécaniques

The rotation of the turbine blades can be carried out at high rotational speeds and is potentially dangerous:

Never touch the blades when rotating.

Never try to stop them by hand.

The hydro has a hinged mechanism to enter and exit the water quickly and easily:

Do not insert fingers in the hydro mechanism as you pull on one of the ends meet.

When bathing, do not climb on the boat relying on hydro.
It is advisable to remove it for swimming, the handling of the Annex and port maneuvers.

2.2 Electrical hazards

The flow of electricity on a boat is a potential danger. All precautions are taken to avoid a sealing problem of wiring the hydro (waterproof cables, custom made and IP65 connectors).
If the material is deteriorated prematurely (friction, crushing the cables ...), immediately stop using the hydro.

The electronic box provided with hydro has a heat sink to dissipate the heat:
Do not touch the electronic box in operation. Avoid putting it in direct contact with materials that can be affected by heat (for example tissues).

3. Manipulation of hydro

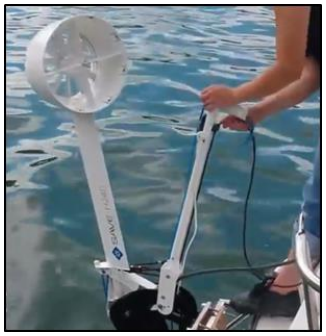
3.1 Set up on the home plate

1) Present the hydrogenerator to the home plate.
2) Slide the hydro on the home plate and pull the white tip to pull the locking finger.

3) Check that the locking pin is properly engaged in the home plate by pulling the hydro. If it remains in place, then it is installed correctly.

3.2 Putting hydrogenerator in the operating position

1) Put in the operating position.

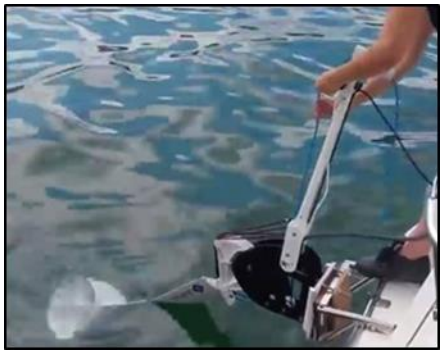


2) Stop the boat.
3) Release the red rope from the cleat.
4) Guide the lowering of the hydro in the water with the red rope.

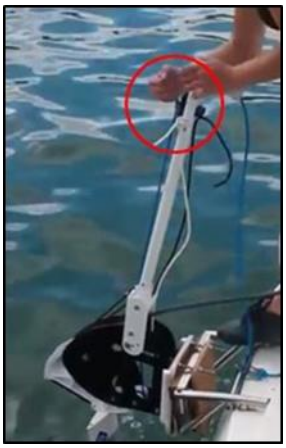
5) Then pull on the blue rope until the arm reaches the low profile position.

6) Lock the blue rope in the automatic cleamcleat.

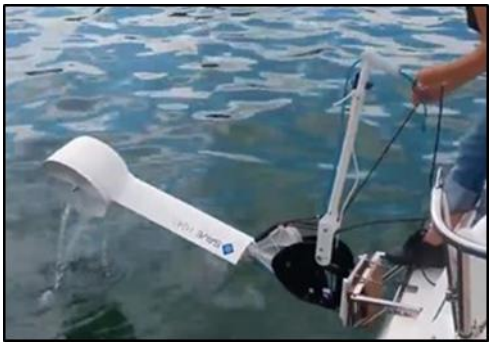
3.3 Raise the hydro

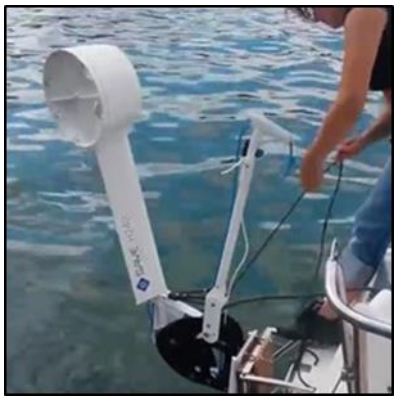


1) Release the blue rope from the automatic cleamcleat.
2) Pull the red rope to lift the hydro to the surface of the water



3) Wait until the turbine is emptied of its water.





4) Continue to raise the hydro. Hang the red to the cleat.

3.4 Extract from the home plate.

1) Pull on the white rope to unlock the locking finger.
2) Slide the hydro to extract it from its home plate.

See the demo video on our website:

http://www.save-marine.com/en/our-solution/12-our-solution/23-hydrogenerateur-solution-facile-a-vivre

4. Supervision of the hydro through WIFI

When the hydro is in the water and when the electrical circuit is correctly achieved (all elements connected to each other), the hydro autonomously generates power to charge the batteries.
WIFI module installed in the electronic box allows you to view on your smartphone, tablet or computer the instantaneous production, production from the last power on and overall production.

4.1 WIFI connection with operating hydro

Putting the hydro operating. Installation of WiFi is to be performed while the the hydro is in the process of generating electricity. Connect the smartphone, tablet or computer on WIFI "save-marine" in the same way that it connects to a home WiFi.

1) Open a web page in the browser of your choice and type the address that was given you.
2) Navigate at your leisure on the site of the electronic box (details of the tabs is shown below).

Caution: To avoid discharging the battery when the the hydro does not work for a long time, the wireless transmitter will stop. It works only when the hydro produced at least 10 w. This is not the case when the boat speed is insufficient (less than 3nds) or when the battery is fully charged.

4.2 Presentation of the tabs in the application

The site on which you log is composed of four main tabs: News, Statistics, service and contact.

The "Info" tab allows you to monitor the instantaneous production of your hydro. The information is separated into two categories :

- The "instant production" provided by the hydro

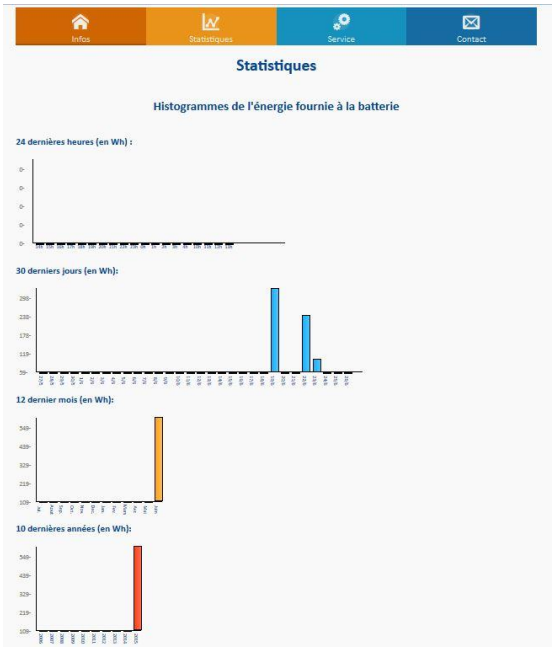
- the power (Watt) of the hydro to the input of the electronic box
- the rotational speed of the turbine RP

- Battery Capacity
  - voltage in Volt
  - instantaneous current in Amps.

Note: The values given by the wireless application does not match the production output of the hydro but one that will be actually delivered to the battery.

The tab "Statistics" allows you to track the history of the production of your hydro.
The information is separated into four categories:

- A histogram provides production during the last 24 hours
  - Energy produced (in Watt / hour) by the hydro to the input of the electronic box.
- A histogram provides production during the last 30 days
  - Energy produced (in Watt / hour) by the hydro to the input of the electronic box
- A histogram provides production during the last 12 months.
  - Energy produced (in Watt / hour) by the hydro to the input of the electronic box
- A histogram provides production for the past 10 years
  - Energy produced (in Watt / hour) by the hydro to the input of the electronic box.

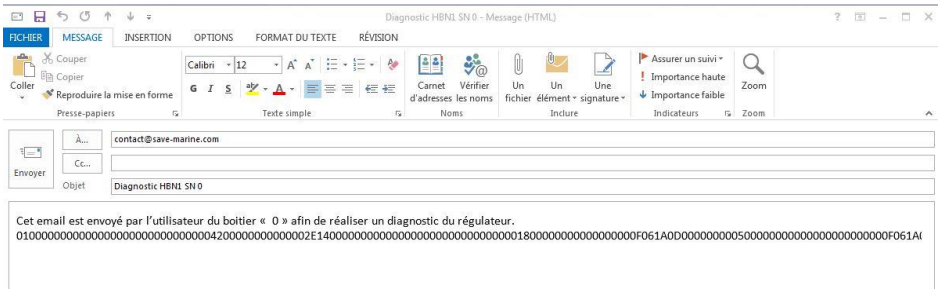


NB: The electronic box will regulate the power generated by the hydro to obtain a current / voltage ratio optimal to charge the battery.
- If the battery charge is low, then the regulator will take the maximum power on the hydro.
- If the battery is fully charged, then the regulator will take the minimum on the hydro power.

Therefore, if you observe an instantaneous power generated by the the hydro very low but the instantaneous speed of rotation of the propeller is high, you may assume that the battery is fully charged.

The Service tab is for use in case of problems encountered with the product. You will find :
- Information about your product, such as model and serial number of the electronic box.
- An automatic email system to send information to Save Marine so that we can identify the problem remotely and propose solutions (click on the small magnifying glass). Indeed, by clicking on "Mail To" you will automatically generate an email which you simply send when you connect to the internet.

Here is an example of an email that will be generated by the electronic box, and you will just have to send.



The tab "Contact" reminds the Save Marine company details.

5. Maintenance

The materials used for the manufacture of the hydro are selected for their resistance to the marine environment. However, it is preferable to rinse with fresh water prior to a period of inactivity.
An algae can deposit on the immersed parts. Regular cleaning will keep the equipment in good operating condition over a longer period. We recommend using products such as clean Boat or other brands specializing in the cleaning of hulls.
The vibrations on the boat can loosen the screws of the the hydro. It is important to regularly check the proper tightening of the screws on the home plate, the through-hull and regulator.
It is important to regularly check the battery voltage. Indeed, if it is too low, the battery will not be recognized by the regulator. The minimum voltage that can endure your battery depends on its chemical composition, see specifications given by its manufacturer.

5.1 Storage and starting

• Storage: Unclip the control arm (see photo below). Rinse with fresh water, clean and dry the the hydro before storing.
• Getting started: check the tightness of all screws (the the hydro and fastening system) and check the battery voltage before turning the hydro operating.

An optional transport bag allows you to carry and store the hydro.

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